

Serial No.: 10/826,198
Group Art Unit: 2634

AMENDMENTS TO CLAIMS

- Please amend pending claims 1, 6, 11, and 16 as indicated below. A complete listing of all claims and their status in the application are as follows:

1. (currently amended) A method for measuring jitter on a data signal,
comprising:

inputting a data signal under test to digitally generate data signal transition locations;
digitally latching a data signal transition location using a sampling clock signal;
digitally converting the data signal transition location to a delay value;
digitally converting the delay value to an edge position output; and
digitally detecting a value of the edge position output.

2. (original) The method of claim 1 further comprising filtering the edge position output prior to detecting a value of the edge position output.

3. (original) The method of claim 1 further comprising adding a dither signal to the signal under test prior to inputting the signal under test to generate signal transition locations.

4. (original) The method of claim 1 further comprising analyzing the edge position output to determine edge position movement in excess of a predetermined magnitude.

5. (original) The method of claim 1 further comprising analyzing the edge position output to provide a root mean square value thereof.

6. (currently amended) A method for measuring jitter on a data signal,
comprising:

inputting a data signal under test to digitally generate data signal transition locations;
digitally latching a data signal transition location using a sampling clock signal;
digitally converting the data signal transition location to a delay value;
digitally converting the delay value to an edge position output using the sampling
clock signal;
digitally detecting peak-to-peak values of the edge positions; and
outputting the detected peak-to-peak values of the edge positions.

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7. (original) The method of claim 6 further comprising filtering the edge position outputs prior to detecting peak-to-peak values of the edge position outputs.
8. (original) The method of claim 6 further comprising adding a dither signal to the data signal under test prior to inputting the data signal under test.
9. (original) The method of claim 6 further comprising analyzing the edge position output to determine edge position movement in excess of a predetermined unit interval magnitude.
10. (original) The method of claim 6 further comprising analyzing the edge position output to provide a root mean square value thereof.
11. (currently amended) Apparatus for measuring jitter on a data signal, comprising:
 - a tapped delay line for digitally generating data signal transition locations therein from a data signal under test inputted thereinto;
 - a sampling clock signal;
 - a sample register connected for digitally latching a data signal transition location therein in response to the sampling clock signal;
 - a priority encoder connected for digitally converting the data signal transition location to a delay value;
 - a converter connected for digitally converting the delay value to an edge position output; and
 - a peak-to-peak detector connected for digitally detecting values of the edge positions.
12. (original) The apparatus of claim 11 further comprising a digital signal processing filter connected for filtering the edge position output prior to the peak-to-peak detector detecting values of the edge positions.
13. (original) The apparatus of claim 11 further comprising a dither unit connected for adding a dither signal to a signal under test prior to the signal under test being inputted into the tapped delay line.
14. (original) The apparatus of claim 11 further comprising an over-range detector connected for analyzing the edge position output to report edge position movement in excess of a predetermined magnitude.

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15. (original) The apparatus of claim 11 further comprising a block that:
performs root mean square measurement calculations; and
is connected for analyzing the edge position output to provide a root mean square
value thereof.
16. (currently amended) Apparatus for measuring jitter on a data signal,
comprising:
a field programmable gate array carry chain;
a tapped delay line that is implemented in the field programmable gate array carry
chain for digitally generating data signal transition locations therein from a
data signal under test inputted thereinto;
a sampling clock signal;
a sample register connected for digitally latching a data signal transition location
therein in response to the sampling clock signal;
a priority encoder connected for digitally converting the data signal transition location
to a delay value;
a converter for digitally converting clock and delay to time values and connected for
digitally converting the delay value to an edge position output; and
a peak-to-peak detector connected for digitally detecting and outputting peak-to-peak
values of the edge positions.
17. (original) The apparatus of claim 16 further comprising digital signal
processing filters connected for filtering the edge position output prior to the peak-to-peak
detector detecting peak-to-peak values of the edge positions.
18. (original) The apparatus of claim 16 further comprising a dither unit
connected for adding a dither signal to a data signal under test prior to the data signal under
test being inputted into the tapped delay line.
19. (original) The apparatus of claim 16 further comprising an over-range
detector connected for analyzing the edge position output to report edge position movement
in excess of a predetermined unit interval magnitude.

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20. (original) The apparatus of claim 16 further comprising a block that:
performs root mean square measurement calculations; and
is connected for analyzing the edge position output to provide a root mean square
value thereof.